

## **CLAIMS**

What is claimed is:

1. A method for introducing a nucleic acid sequence into the genome of a plant cell and regenerating a transformed plant therefrom, said method comprising culturing said plant cell on at least one plant transformation media, said at least one plant transformation media comprising an effective amount of lipoic acid or an analog thereof.
2. The method of claim 1 wherein the amount of lipoic acid or an analog thereof in said plant transformation media is between about 2  $\mu\text{M}$  and about 2000  $\mu\text{M}$ .
3. The method of claim 1 wherein the amount of lipoic acid or an analog thereof in said plant transformation media is between about 5  $\mu\text{M}$  and about 1500  $\mu\text{M}$ .
4. The method of claim 1 wherein the amount of lipoic acid or an analog thereof in said plant transformation media is between about 5  $\mu\text{M}$  and about 100  $\mu\text{M}$ .
5. A plant transformation media comprising an effective amount of lipoic acid or an analog thereof.
6. The media of claim 5 wherein the amount of lipoic acid or an analog thereof in said plant transformation media is between about 2  $\mu\text{M}$  and about 2000  $\mu\text{M}$ .
7. The media of claim 5 wherein the amount of lipoic acid or an analog thereof in said plant transformation media is between about 5  $\mu\text{M}$  and about 1500  $\mu\text{M}$ .
8. The media of claim 5 wherein the amount of lipoic acid or an analog thereof in said plant transformation media is between about 5  $\mu\text{M}$  and about 100  $\mu\text{M}$ .

9. The media of claim 5 wherein said media is suitable for co-cultivation of plant cell or plant tissue with *Agrobacterium*.
10. The media of claim 5 wherein said media is suitable for the selection of transformed plant cells or tissues.
11. The media of claim 5 wherein said media is suitable for regeneration of transformed plant cells or tissues into whole fertile plants.
12. A method of producing a transformed tomato plant comprising
- a) isolating a tomato explant suitable for transformation;
  - b) combining said tomato explant with a heterologous gene construct containing a gene of interest to produce a transformed tomato explant;
  - 5 c) culturing said transformed tomato explant in a plant transformation media for selection and shoot induction to produce transformed shoots therefrom, said plant transformation media containing an effective amount of lipoic acid;
  - d) identifying said transformed shoots; and
  - e) rooting said transformed shoots to produce a transformed tomato plant.
13. A method of producing a transformed potato plant comprising
- a) isolating a potato explant suitable for transformation;
  - b) combining said potato explant with a heterologous gene construct containing a gene of interest to produce a transformed potato explant;
  - 5 c) culturing said transformed potato explant in a first plant transformation media containing an effective amount of lipoic acid until transformed shoots form from said explants;
  - d) rooting said transformed shoots to produce a transformed potato plant.

14. A method of producing a transformed wheat plant comprising
- a) isolating a wheat explant suitable for transformation;
  - b) combining said wheat explant with a heterologous gene construct containing a gene of interest to produce a transformed wheat explant;
  - 5 c) culturing said transformed wheat explant in a first plant transformation media containing an effective amount of lipoic acid and a selective agent to select for transformed wheat explants;
  - d) culturing said transformed wheat explants in a second plant transformation media containing an effective amount of lipoic acid to regenerate transformed
  - 10 shoots from said transformed wheat explants;
  - e) rooting said transformed shoots to produce a transformed wheat plant.
15. A method of producing a transformed soybean plant comprising
- a) isolating a soybean explant suitable for transformation;
  - b) combining said soybean explant with a heterologous gene construct containing a gene of interest to produce a transformed soybean explant in a plant
  - 5 transformation media containing an effective amount of lipoic acid;
  - c) culturing said transformed soybean explant in a plant transformation media containing a selective agent to select for transformed soybean explants containing the gene of interest and producing transformed shoots therefrom;
  - and
  - 10 d) rooting said transformed shoots to produce a transformed soybean plant.